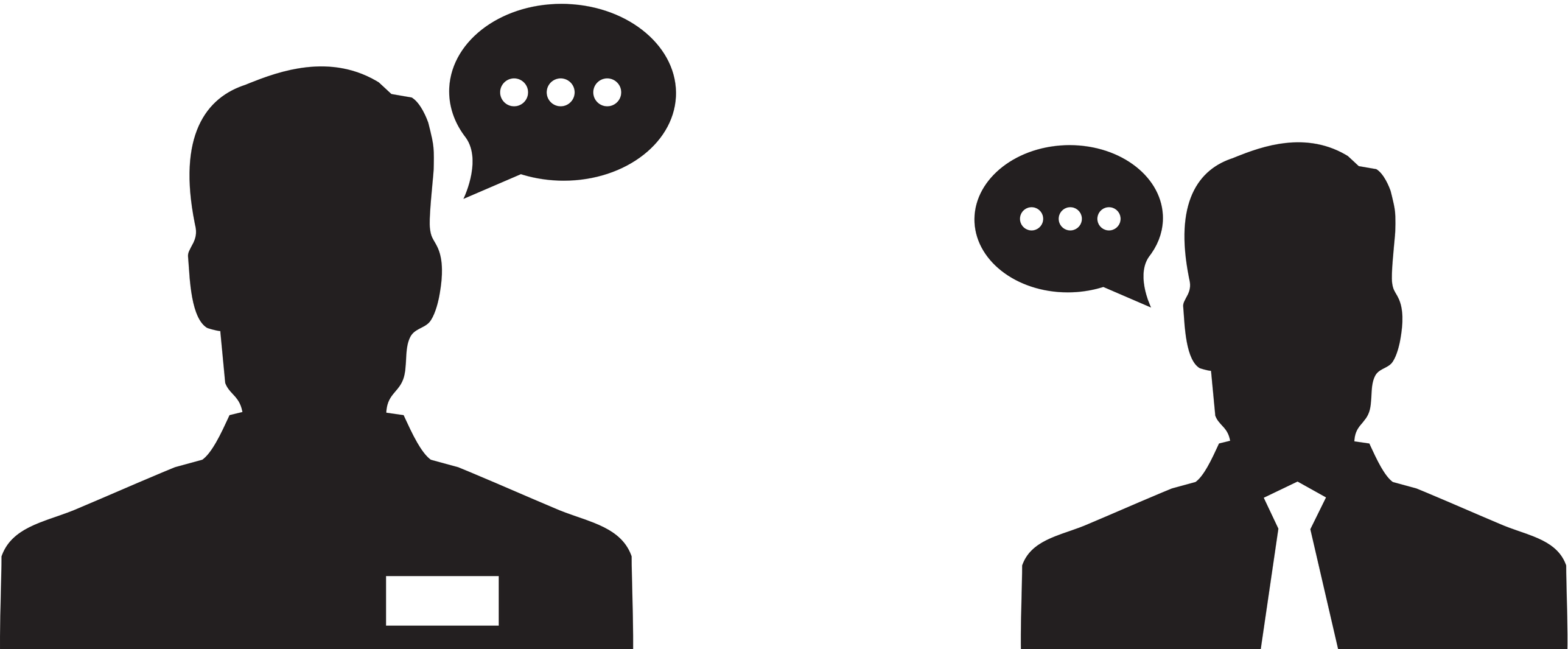
Patterns for Collaborative Software Development

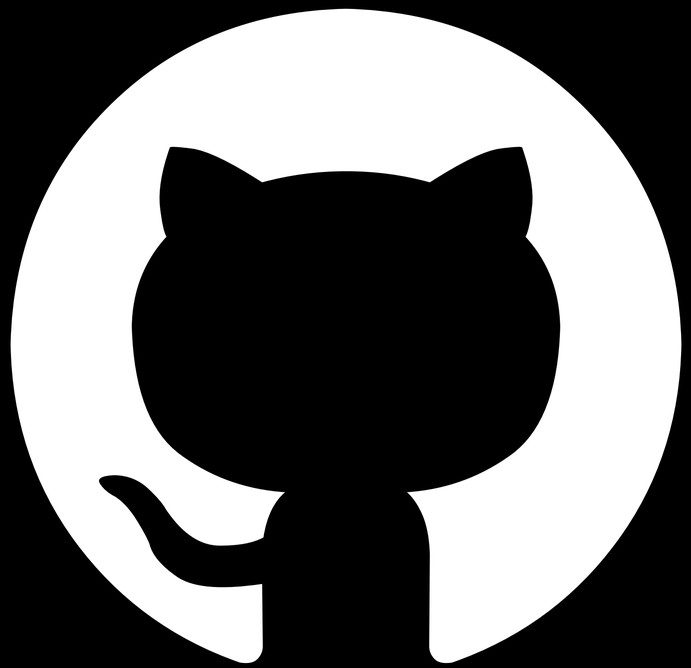
in a social world

1. Act
2. Broadcast
3. Condense
4. Decide

v3.0



@MATTHEWMCCULL

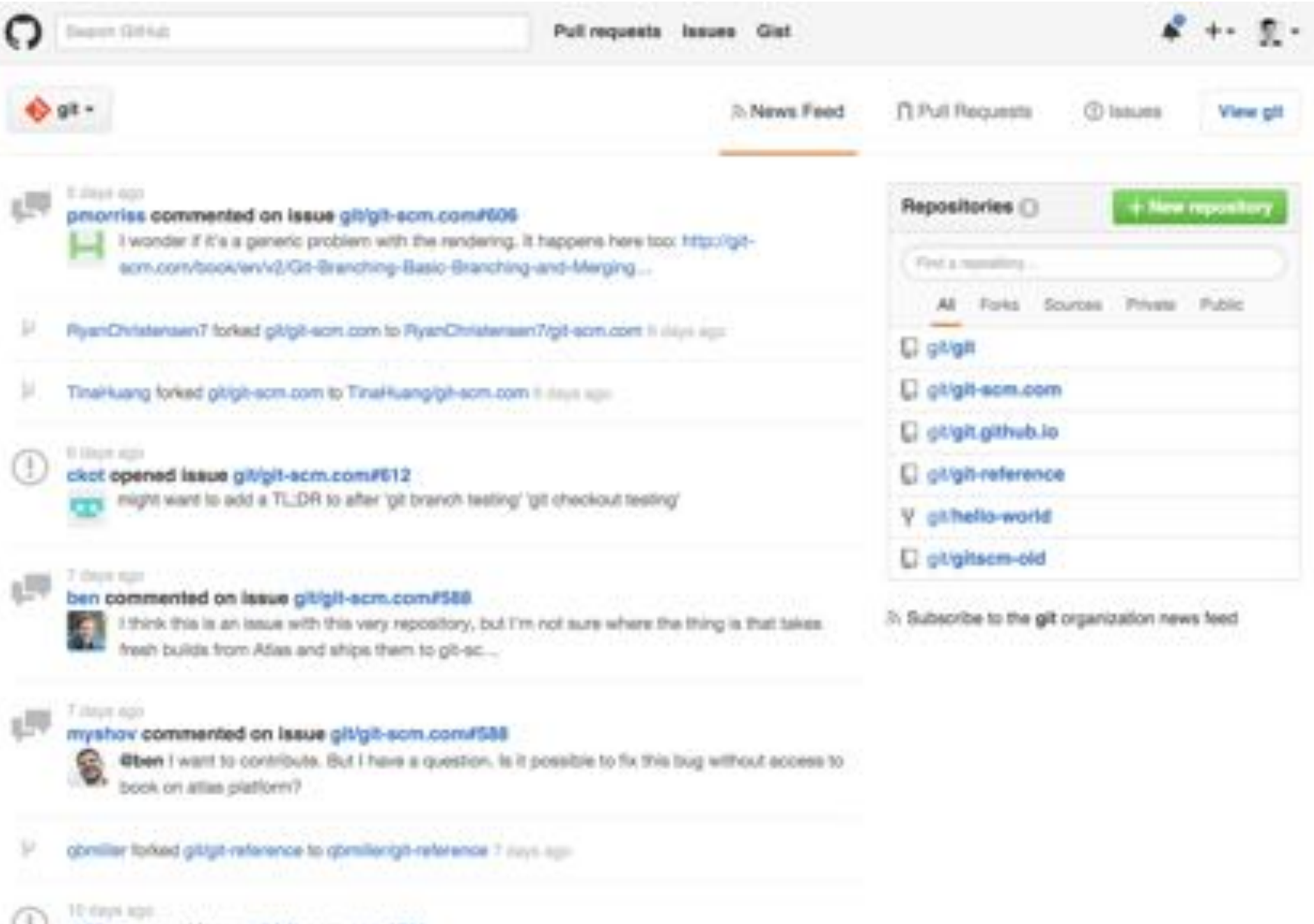


99TH

86TH

PASSED THE NYT

CHASING NETFLIX


Search GitHub
Pull requests
Issues
Gist
git
News Feed
Pull Requests
Issues
View git
pnorriss commented on issue git/git-scm.com#606
I wonder if it's a generic problem with the rendering. It happens here too: http://git-scm.com/book/en/v2/Git-Branching-Basic-Branching-and-Merging...
RyanChristensen7 forked git/git-scm.com to RyanChristensen7/git-scm.com
TinaHuang forked git/git-scm.com to TinaHuang/git-scm.com
ckot opened issue git/git-scm.com#612
might want to add a TL;DR to after 'git branch testing' 'git checkout testing'
ben commented on issue git/git-scm.com#588
I think this is an issue with this very repository, but I'm not sure where the thing is that takes fresh builds from Atlas and ships them to git-sc...
myshov commented on issue git/git-scm.com#588
@ben I want to contribute. But I have a question. Is it possible to fix this bug without access to book on atlas platform?
qbmiller forked git/git-reference to qbmiller/git-reference
Repositories
New repository
Find a repository...
All
Forks
Sources
Private
Public
git/git
git/git-scm.com
git/git.github.io
git/git-reference
git/hello-world
git/gitscm-old
Subscribe to the git organization news feed

git ▾ News Feed Pull Requests Issues View git

8 days ago
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RyanChristensen7 forked git/git-scm.com to RyanChristensen7/git-scm.com 8 days ago

TinaHuang forked git/git-scm.com to TinaHuang/git-scm.com 8 days ago

8 days ago
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7 days ago
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7 days ago
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cbmiller forked git/git-reference to cbmiller/git-reference 7 days ago

10 days ago
r105m opened issue git/git-scm.com#611
Can not reset some files with just lineending differences

Repositories + New repository

Find a repository...

All Forks Sources Private Public

- git/git
- git/git-scm.com
- git/git.github.io
- git/git-reference
- git/hello-world
- git/gitscm-old

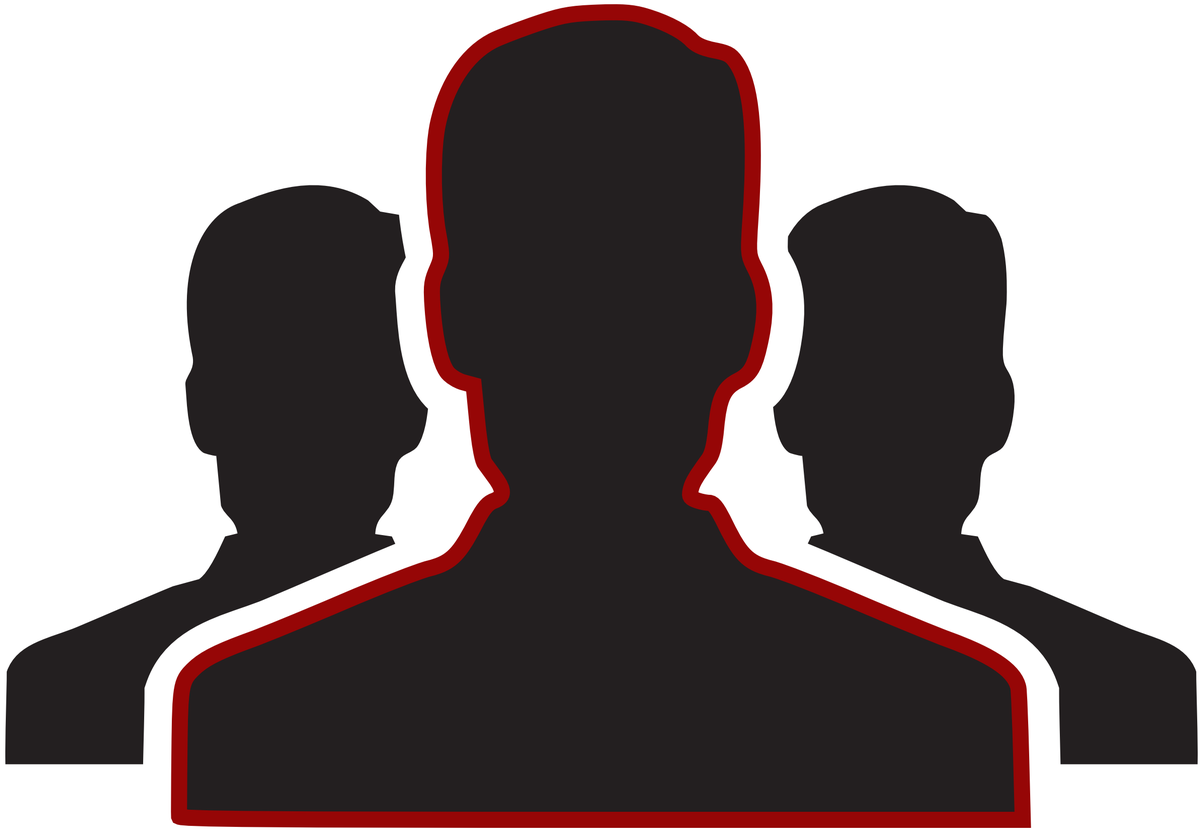
Subscribe to the **git** organization news feed

APPLE II®
BASIC PROGRAMMING MANUAL
apple computer inc.

Assembler

VB

Java



1MB DATA != 1MB KNOWLEDGE

Enhance your software development
with this one easy trick

COLLABORATION
IF (DATA) THEN (KNOWLEDGE)

HUMAN EMAIL MEETING NOTES

BANK REPORTS RESEARCH PAPER LOGS

AUTO RESPONDERS WEATHER LOGS

CUSTOMER TRANSACTION LOGS

SURVEY RESULTS WRITING TICKETS

PITCH DECK PROPOSAL DOCUMENTS

DATA++ != KNOWLEDGE++

DATA

DATA

DATA

DATA

ADWEEK
TECHNOLOGY
Gmail's Unsubscribe Button Could Be a Huge Blow to Email Marketers
Lists will shrink By Ed Lamb
August 7, 2014, 12:33 PM EDT
Gmail
by Google
How many times have you wanted to unsubscribe from a commercial email list but didn't want to scroll all the way to the bottom of a message and then have to click through to an opt-out landing page that would ultimately require you to click a few more times? Too many times to count, right?

create Business Value

PROBLEM ✓

Solution?

$$1 + 1 = [\,[\,(9 \times 3) / 3\,] / 3\,] - 1$$

1. Act
2. Broadcast
3. Condense
4. Decide

Tools

EASY

EASY...

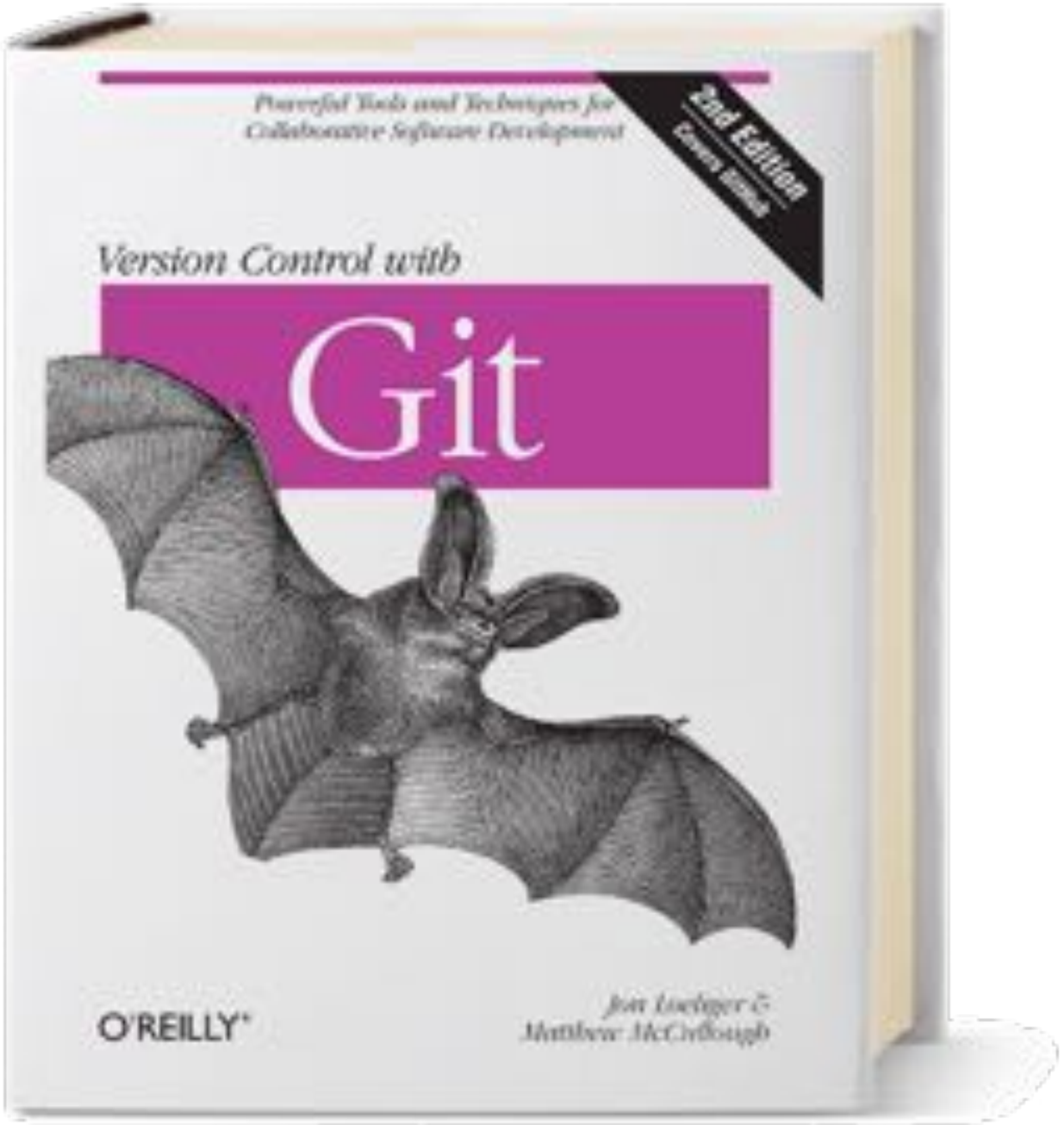
EASY... RIGHT?

HUMANS

WHAT'S THE PROBLEM?

SUSTAINABLE SOFTWARE DEVELOPMENT IS HARD

I WANTED TO HELP MAKE IT EASIER


Powerful Tools and Techniques for
Collaborative Software Development
2nd Edition
Covers GitHub
Version Control with
Git
O'REILLY
Jon Loeliger &
Matthew McCullough

What are the HARDEST things about SOFTWARE DEVELOPMENT, today?

10.

Projects frequently get stuck in the planning phase

9.

Stakeholders want regular progress reports

8.

Our devs want self-organizing, startup culture teams

7.

I don't know who to assign to architectural projects

6.

We can't easily find out who's a domain expert

5.

We don't know how to optimize for continual learning

4.

No one wants to do the repetitive data-processing tasks

3.

We have a difficult time attracting top talent

2.

We struggle to to accurately estimate projects

1.

The stream of project info is overwhelming us all

"Our job is to find a

few intelligent things to do,

not to keep up with every damn thing in the world."

–Charlie Munger, Partner at Bershire Hathaway

Let's walk through the 4 Steps

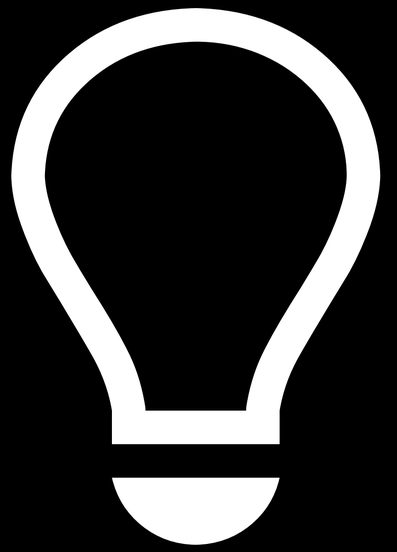
1. Act
2. Broadcast
3. Condense
4. Decide

"It is not enough to just have a good idea.

Only when you act, when you implement,

do you truly innovate.

–Tom Kelley, Jonathan Littman: The Ten Faces of Innovation



act EARLY

POST

GitHub, Inc. [US] https://github.com/groovy/groovy-core/edit/master/build.gradle

```
448 //task licenseFormatCustom(type:nl.javadude.gradle.plugins.license.License) {
449 //    source = fileTree(dir:'src').include ('**/*.java','**/*.groovy','**/*.html','**/*.css','**/*.xml','**/*.properties','**/*.properties'
450 //}
451 //
452 //task licenseFormatGradle(type:nl.javadude.gradle.plugins.license.License) {
453 //    source = files(fileTree(dir:projectDir).include('**/*.gradle'),fileTree('buildSrc').include('**/*.groovy'))
454 //}
455 //
456 //licenseFormat.dependsOn licenseFormatCustom
457 //licenseFormat.dependsOn licenseFormatGradle
458 //
459
```

Propose file change

Update build.gradle

Add an optional extended description...

Propose file change | Cancel

© 2015 GitHub, Inc. Terms Privacy Security Contact Help

Status API Training Shop Blog About Pricing

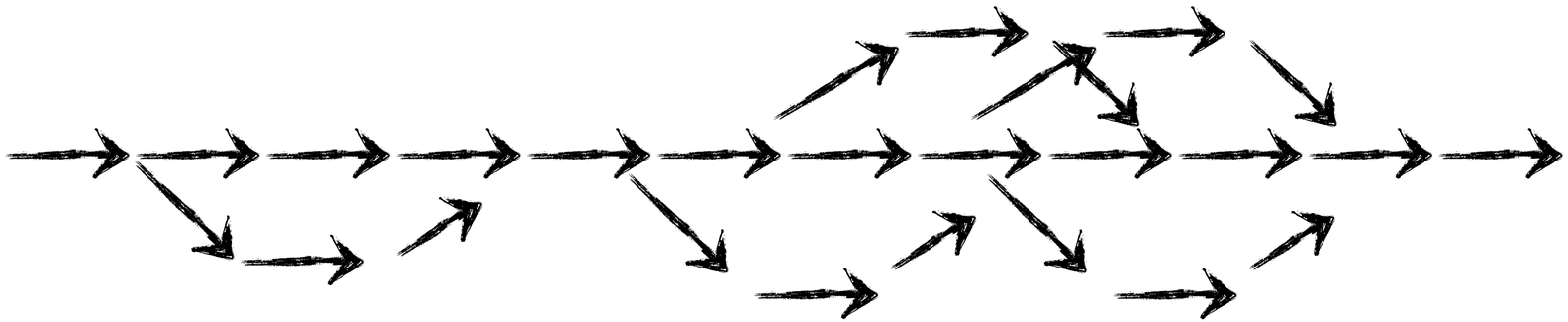
"Inspiration Is for Amateurs
The Rest of Us Just Show Up and Get to Work"

–painter Chuck Close

Commit

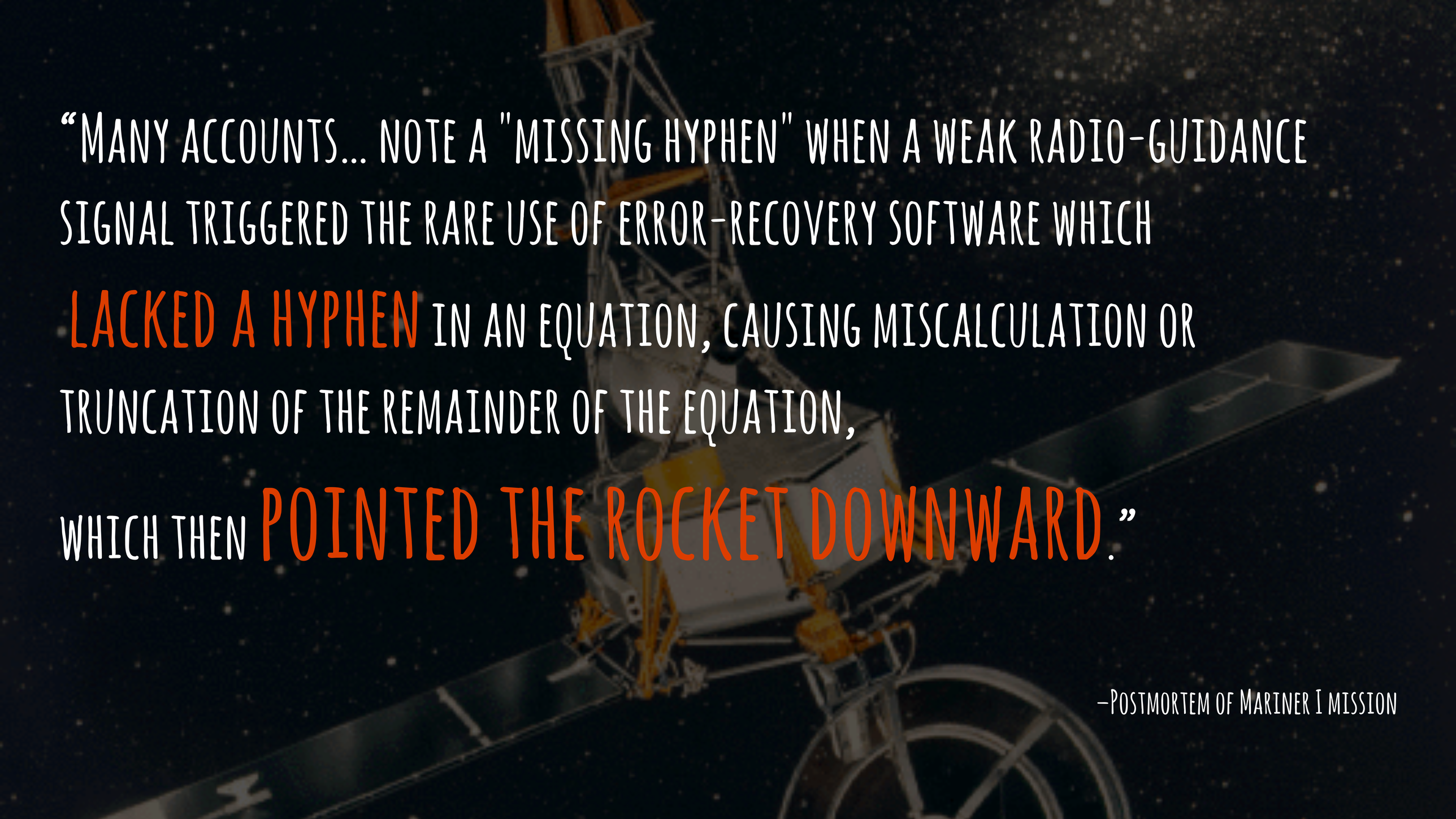
GitHub

MASTER BRANCH



TOPIC BRANCHES

AT&T 4G
15:25
39%
Mentions
Detail
Nov 6, 2012 at 15:24
via web
@matthewmccull Here are some numbers to use: 18months, 700 developers moved, 4000+ reviews in Gerrit, n*10k builds done in Jenkins. :)
Peter Jönsson
@peterjoensson



"Many accounts... note a "missing hyphen" when a weak radio-guidance signal triggered the rare use of error-recovery software which **lacked a hyphen** in an equation, causing miscalculation or truncation of the remainder of the equation, which then **pointed the rocket downward**."

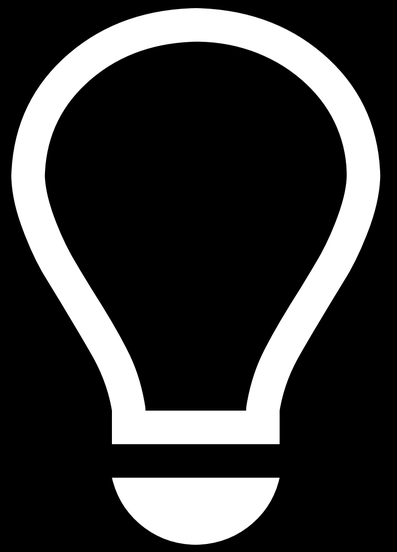
–Postmortem of Mariner I mission

"Fail often to succeed sooner"

–Tom Kelley, Ideo

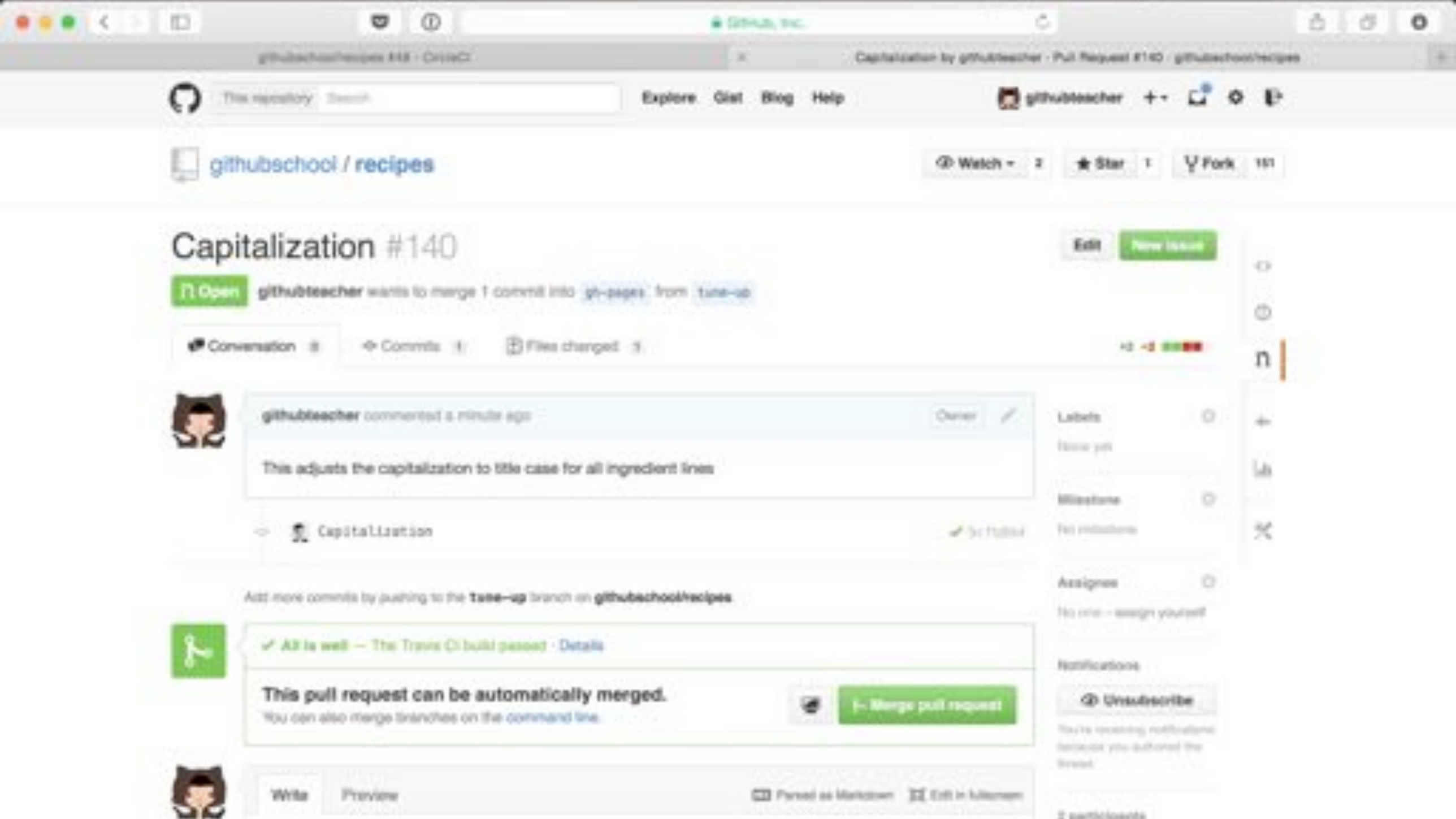
Michael Nygard
@mtnygard

I see that fast deploys allow @etsy great flexibility, because they don't have to be right every time. #gotoaar



AUTOMATE LIBERALLY

AUTOMATE!

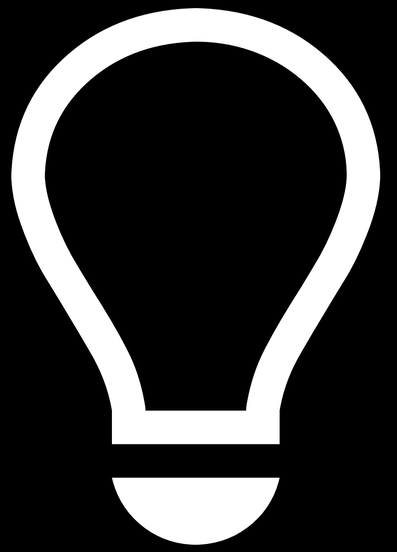

githubschool/recipes #48 · CircleCI
Capitalization by githubteacher · Pull Request #140 · githubschool/recipes
This repository
Explore
Gist
Blog
Help
githubteacher
githubschool / recipes
Watch 2
Star 1
Fork 151
Capitalization #140
Edit
New issue
Open
githubteacher wants to merge 1 commit into gh-pages from tune-up
Conversation 0
Commits 1
Files changed 1
+2 -2
githubteacher commented a minute ago
Owner
This adjusts the capitalization to title case for all ingredient lines
Capitalization
Add more commits by pushing to the tune-up branch on githubschool/recipes.
All is well — The Travis CI build passed · Details
This pull request can be automatically merged.
You can also merge branches on the command line.
Merge pull request
Write
Preview
Parsed as Markdown
Edit in fullscreen
Labels
None yet
Milestone
No milestone
Assignee
No one—assign yourself
Notifications
Unsubscribe
You're receiving notifications because you authored the thread.
2 participants

I've acted. Now what?

1. Act
2. Broadcast
3. Condense
4. Decide

"...when the amount of information available to people increases much faster than our techniques for processing it, then we can get ourselves in a lot of trouble."

–Nate Silver, author of The Signal and the Noise



OPEN EVERYTHING

Fork me on GitHub

Open Source (Almost) Everything

22 Nov 2011 - San Francisco

When Chris and I first started working on GitHub in late 2007, we split the work into two parts. Chris worked on the Rails app and I worked on Grit, the first ever Git bindings for Ruby. After six months of development, Grit had become complete enough to power GitHub during our public launch of the site and we were faced with an interesting question:

Should we open source Grit or keep it proprietary?

Keeping it private would provide a higher hurdle for competing Ruby-based Git hosting sites, giving us an advantage. Open sourcing it would mean thousands of people worldwide could use it to build interesting Git tools, creating an even more vibrant Git ecosystem.

After a small amount of debate we decided to open source Grit. I don't recall the specifics of the conversation but that decision nearly four years ago has led to what I think is one of our most important core values: open source (almost) everything.

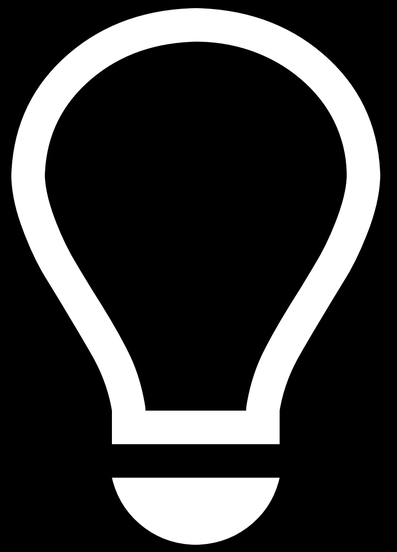
Why is it awesome to open source (almost) everything?

If you do it right, open sourcing code is **great advertising** for you and your company. At

HELP!

"Most of your computer science career will be single data source, single CPU, single threaded processing. Don't worry about chapter 7."

–my MOST incorrect university professor, ever



TARGET BROADCASTS

github / github PRIVATE

Watch 31 Star 41 Fork 31

Issues Pull requests Labels Milestones

Please review the guidelines for contributing to this repository.

Small UI tweak to Issues page

No one is assigned

No milestone

Write Preview Parsed as Markdown Edit in fullscreen

Hey @design

- **github/design** This
- **github/email-design** Email Design (HTML/Text)
- **github/native-design** *No description provided*
- **github/product-design** GitHub Product Design
- **github/creative** Design and art with marketing flavor

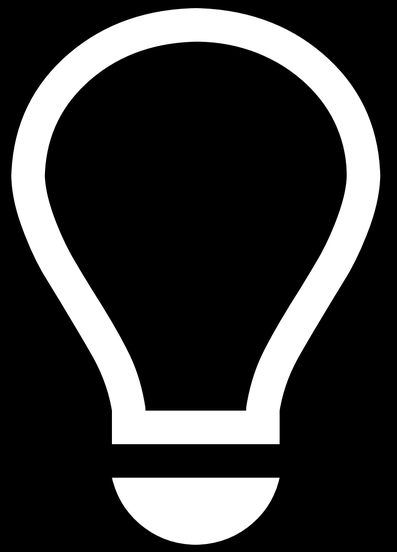
Attach images by dragging & dropping, selecting them, or pasting from the clipboard.

Labels

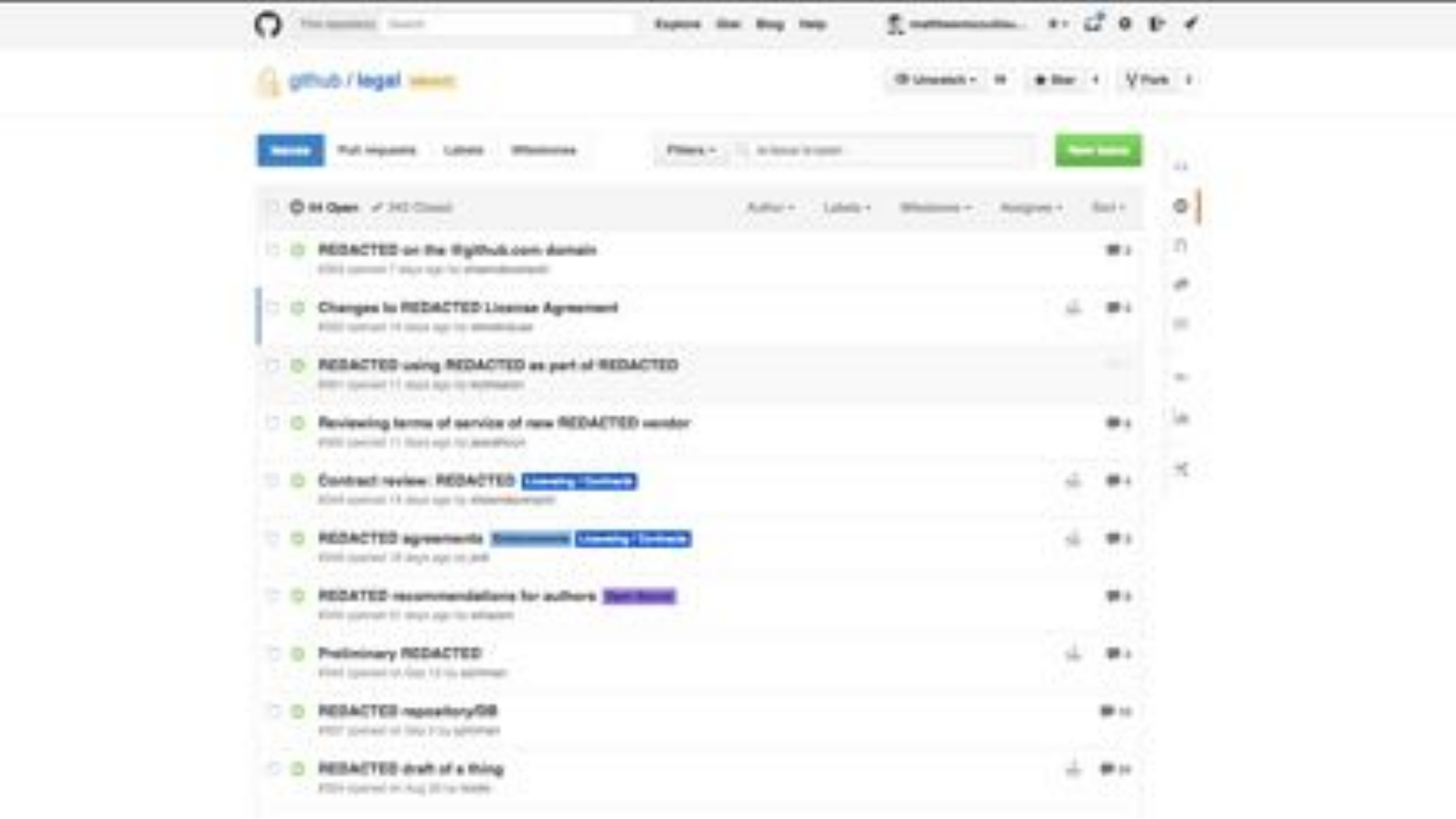
- ENGINEERING P...
- OOO
- PRIORITY
- SECURITY
- accessibility
- ace
- api
- audit-logs
- avatars
- billing
- bounty
- bug

"Running a fundamentally different approach to decision-making, being much more transparent in the way a company communicates, and... having a CEO that is absolutely focused on innovation is something that any company can do."

–Jonathan Rosenberg, Former SVP of Products at Google

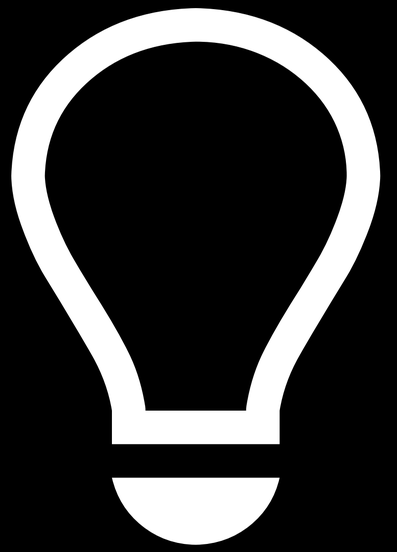


BROADCAST SECRETS


github / legal
Issues
Pull requests
Labels
Milestones
Filters
94 Open
242 Closed
Author
Labels
Milestones
Assignees
Sort
REDACTED on the RightHub.com domain
Changes to REDACTED License Agreement
REDACTED using REDACTED as part of REDACTED
Reviewing terms of service of new REDACTED vendor
Contract review: REDACTED
Awaiting Contract
REDACTED agreements
Enhancement
Awaiting Contract
REDATED recommendations for authors
Open Source
Preliminary REDACTED
REDACTED repository/DB
REDACTED draft of a thing

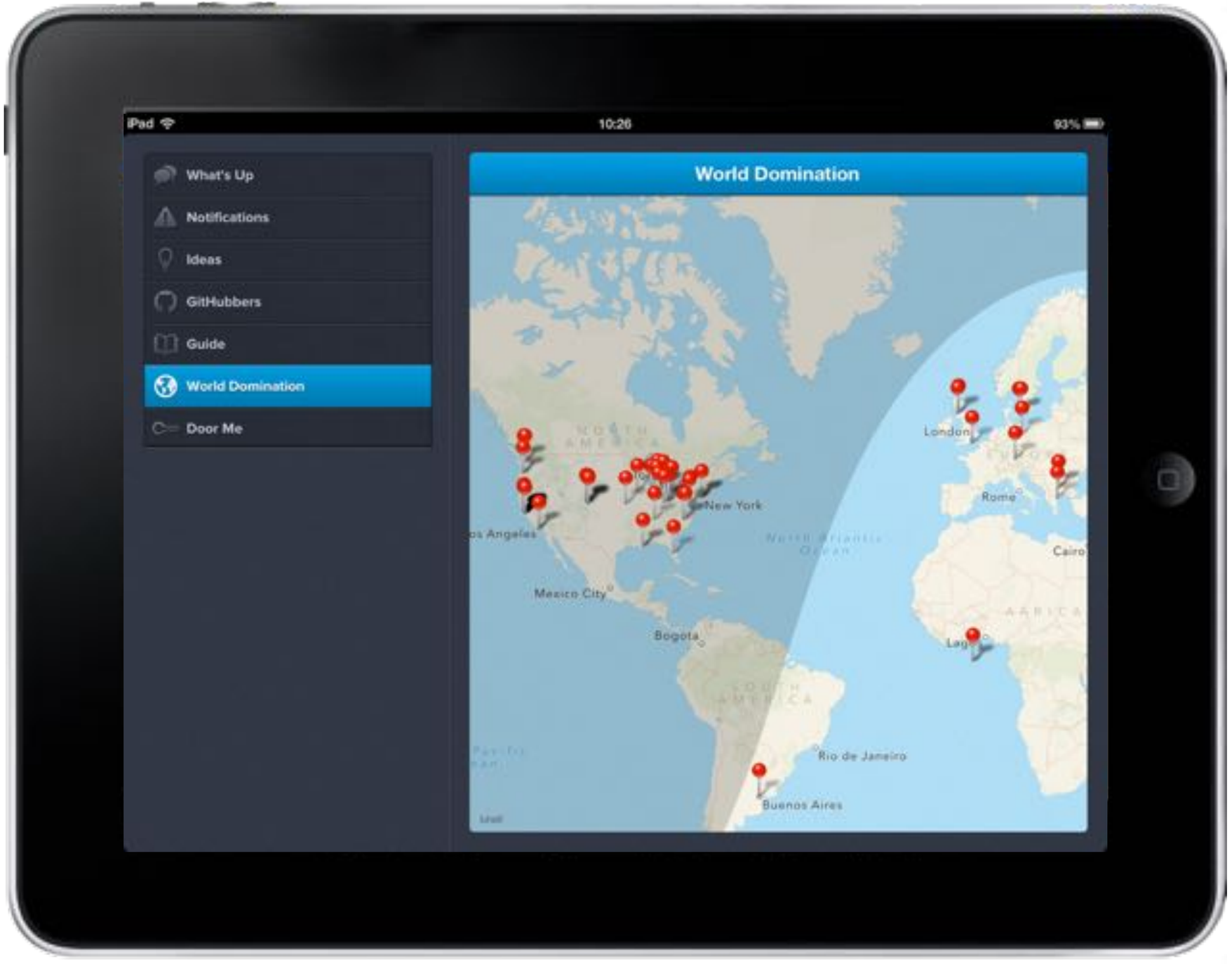
"We... take the presentations that were given to the board of directors, and we show them to every employee in the company in order to promote communication. And we have a huge disclaimer about, it's private information... We've never had a leak."

–Eric Schmidt, Executive Chairman, Google



WORK ASYNCHRONOUSLY

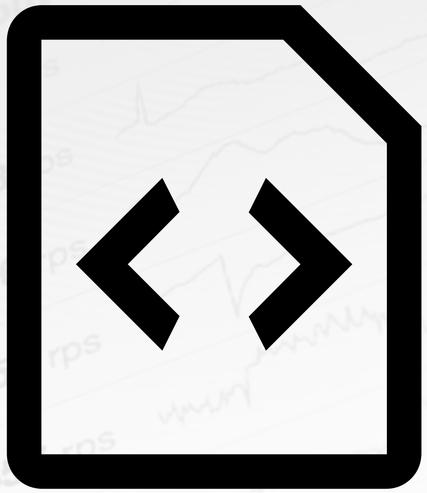
GITHUB.COM VISION:
THE BEST WAY TO
DESIGN, BUILD, SHIP
SOFTWARE, TOGETHER

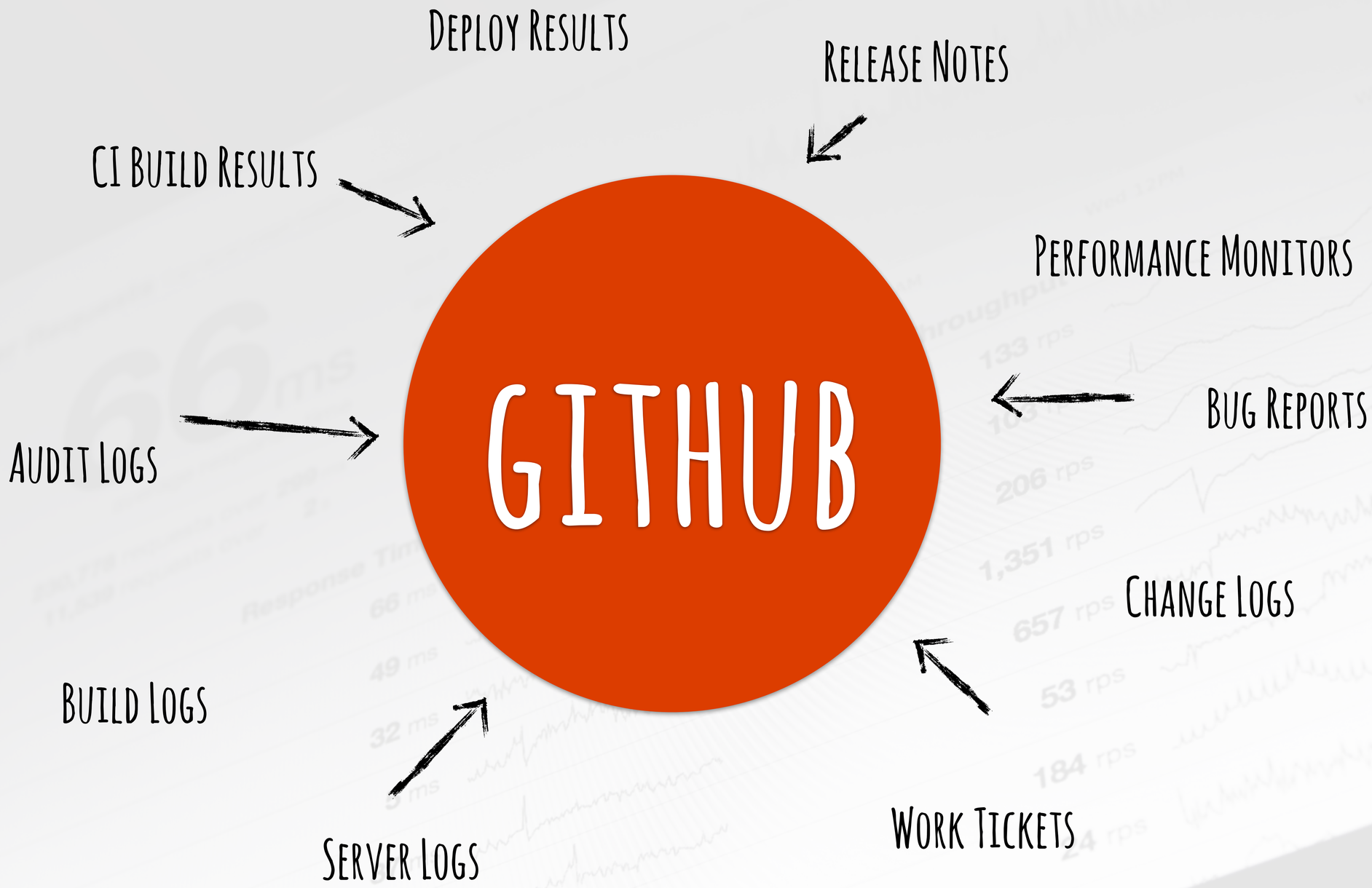

iPad
10:26
93%
What's Up
Notifications
Ideas
GitHubbers
Guide
World Domination
Door Me
World Domination
New York
Mexico City
Bogota
Rio de Janeiro
Buenos Aires
London
Rome
Cairo

How do I make SENSE of it all?

1. Act
2. Broadcast
3. Condense
4. Decide

3.5 BILLION DOCS




Deploy Results
Release Notes
CI Build Results
Performance Monitors
GitHub
Audit Logs
Bug Reports
Change Logs
Build Logs
Server Logs
Work Tickets

"Humans are by nature, single-threaded processors. Much of what I do every day is to evaluate which threads are noise and which are signal. Unmanaged, my world moves towards 100% noise."

–Jesse Newland, Ops at Github

HUMAN EMAIL MEETING NOTES

BANK REPORTS RESEARCH PAPER LOGS

AUTO RESPONDERS WEATHER LOGS

CUSTOMER TRANSACTION LOGS

SURVEY RESULTS WRITING TICKETS

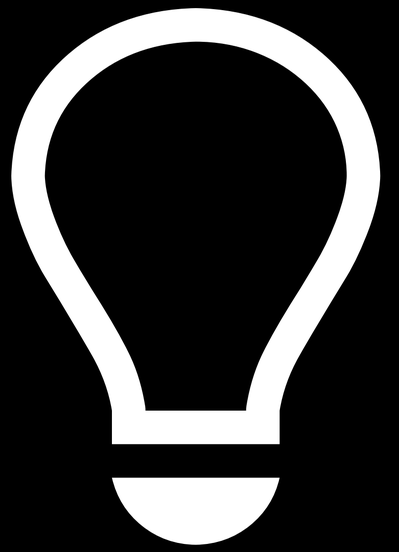
PITCH DECK PROPOSAL DOCUMENTS

dis·til·la·tion

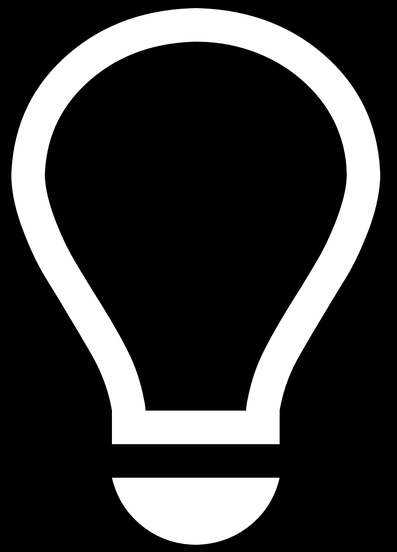
/ˌdistəˈlāSHən/

noun

1. the action of purifying a liquid by a process of heating and cooling.
   "the petroleum distillation process"
2. the extraction of the essential meaning or most important aspects of something.
   "the film is a distillation of personal experiences"



LEVERAGE COMPUTATION



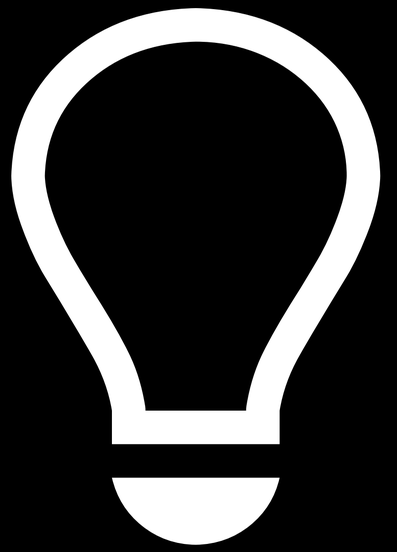
UNIFY INFORMATION

Dashboard

GitHub

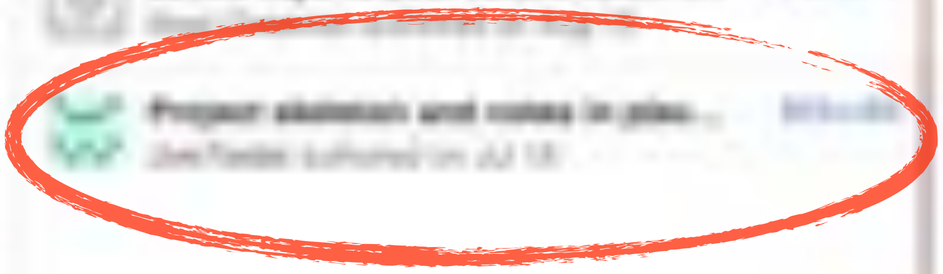
```
* b4f86a4 Git 2.0-rc2
* 35936f8 Git 2.0-rc1
* cc29195 Git 2.0-rc0
*   68773ac Sync with 1.9.2
|\
| * 0bc85ab Git 1.9.2
* |   5172cb3 Sync with 1.9.1
|\ \
| |/
| * cee0c27 Git 1.9.1
* |   e3f1185 Merge branch 'cc/starts-n-ends-with-endgame'
|\ \
| * | 666c90b strbuf: remove prefixcmp() and suffixcmp()
* | |   2687ffd Merge branch 'jc/hold-diff-remove-q-synonym-for-no-deletion'
|\ \ \
| * | | c48f681 diff: remove "diff-files -q" in a version of Git in a distant future
* | | |   289ca27 Merge branch 'gj/push-more-verbose-advice'
|\ \ \ \
| * | | | 11037ee push: switch default from "matching" to "simple"
* | | | |   2b4a888 Merge branch 'jc/core-checkstat-2.0'
|\ \ \ \ \
| * | | | | c1b5d73 core.statinfo: remove as promised in Git 2.0
* | | | | |   160c4b1 Merge branch 'jc/add-2.0-ignore-removal'
|\ \ \ \ \ \
| * | | | | | fdc97ab git add <pathspec>... defaults to "-A"
:
```

iPad
10:25
93%
What's Up
Notifications
Ideas
GitHubbers
Guide
World Domination
Door Me
Rick Bradley
15h
Finally finna start on my mini-summit talk from my new favorite cafe -- Cafe Hub.
Josh Vera
15h
HAM on Halp
Jerry Cheung
15h
Spent some time pairing with my girlfriend on Matlab. What a weird language.
Jake Douglas
15h
I saw that the dotcom summit is going to be recorded, but is it going to be streamed? I sadly wasn't able to make it down this time, but I would enjoy watching the talks and discussions live.
Really stoked to see what everyone has come up with.
Joshua Peek
16h
Wrapping up slides at the airport. To go over time, talk faster, or cut slides? Probably do a little of each.
Tim Pease
16h
Overheard some gentlemen talking about git and subversion while waiting in line for coffee at the Denver airport. Introduced myself and



CONTEXT MATTERS

GitHub4Live / GitHub4Live-Addon / cartridges / GitHub4Live / content / pagescrip...



Raw | Normal view | History

added logic to post details about i...

Prepare skeleton and notes in plan...

added logic to post details about i...

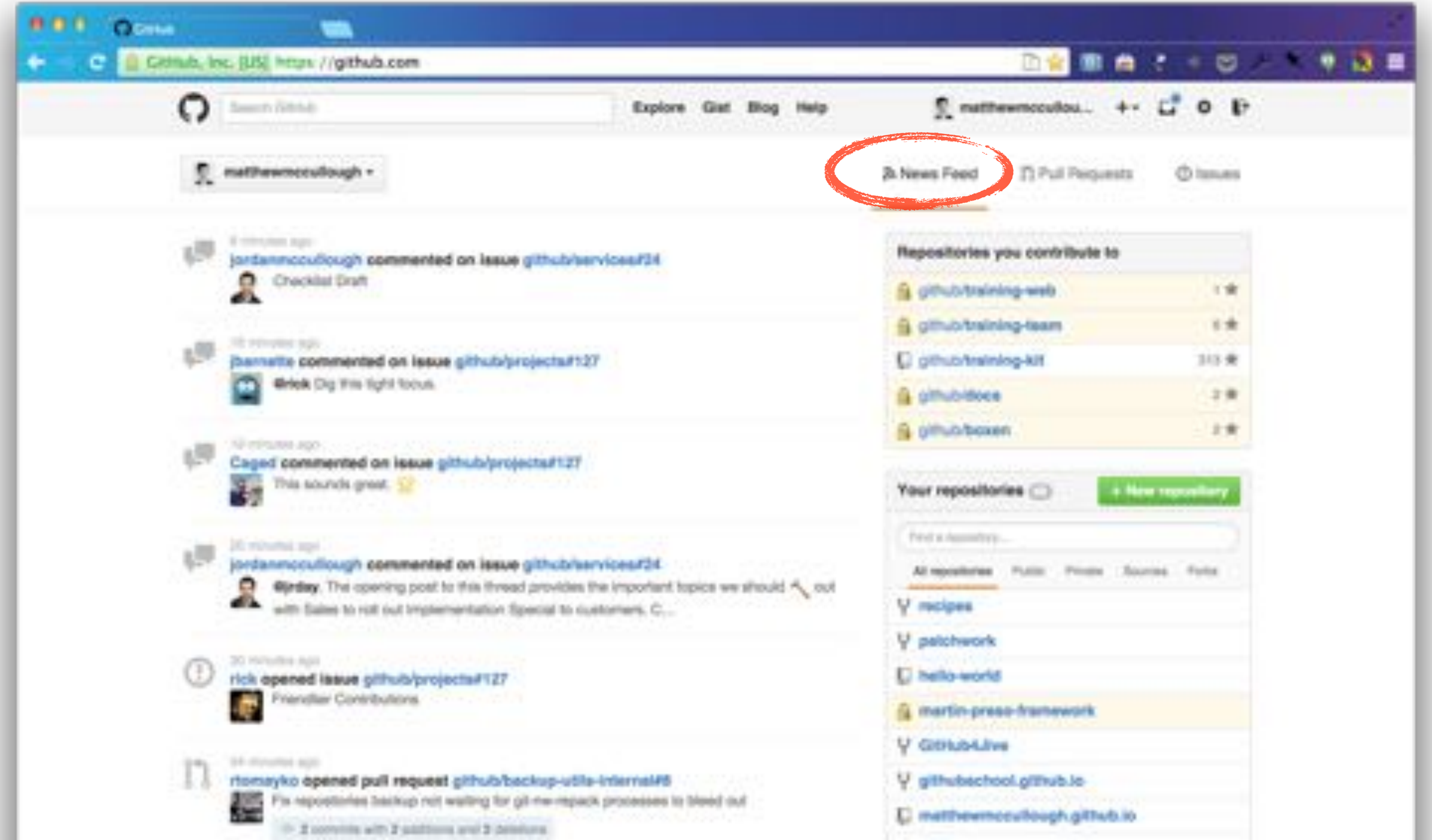
changed how search looks for wate...

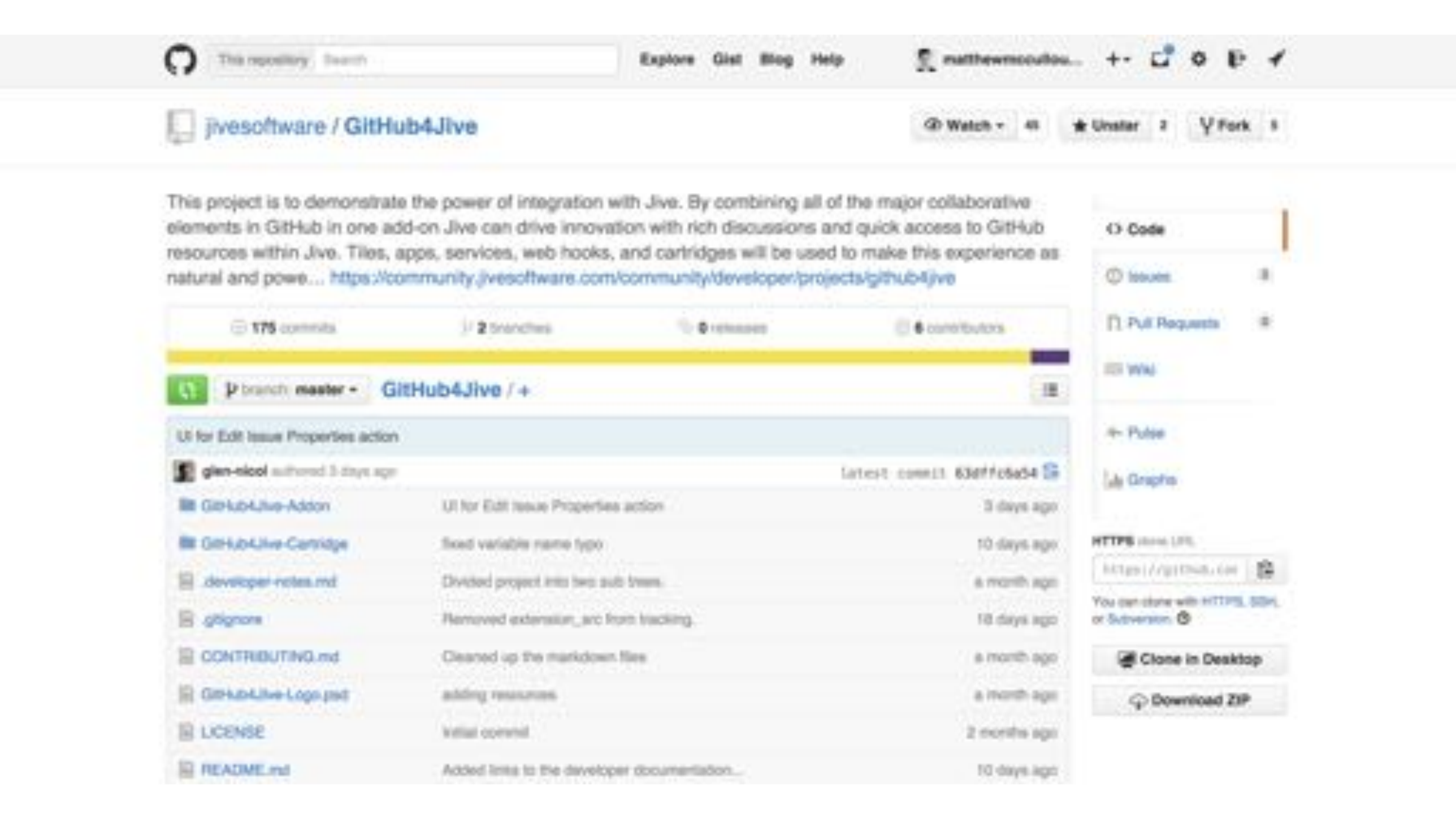
added logic to post details about i...

```
this.getProcessData = function (param, sendResponse) {
    var issue = new Object();
    if (!$('.js-issue-title').length) {
        issue.title = $('.js-issue-title').text();
    }
    else {
        issue.title = $('meta[property="og:title"]').attr('content');
    }
    var authorObj = $('.flex-table-item-primary .author');
    issue.author = authorObj.text();
    issue.authorUrl = "https://github.com" + authorObj.attr('href');
    issue.url = document.location.href;
    issue.issueNumber = getIssueNumber();

    issue.issueTag = getIssueTag();

    issue.description = $('.comment-body:first').text();
    sendResponse(issue);
};
```


Explore
Gist
Blog
Help
matthewmccullough
News Feed
Pull Requests
Issues
jordanmccullough commented on issue github/services#24
Checklist Draft
jbarnette commented on issue github/projects#127
@rick Dig this tight focus.
Caged commented on issue github/projects#127
This sounds great.
jordanmccullough commented on issue github/services#24
@jrday The opening post to this thread provides the important topics we should out with Sales to roll out Implementation Special to customers. C...
rick opened issue github/projects#127
Friendlier Contributions
rtomayko opened pull request github/backup-utils-internal#8
Fix repositories backup not waiting for git-mw-repack processes to bleed out
Repositories you contribute to
github/training-web
github/training-team
github/training-kit
github/docs
github/boxen
Your repositories
+ New repository
All repositories
Public
Private
Sources
Forks
recipes
patchwork
hello-world
martin-preza-framework
GitHub4Live
githubschool.github.io
matthewmccullough.github.io


This repository
Search
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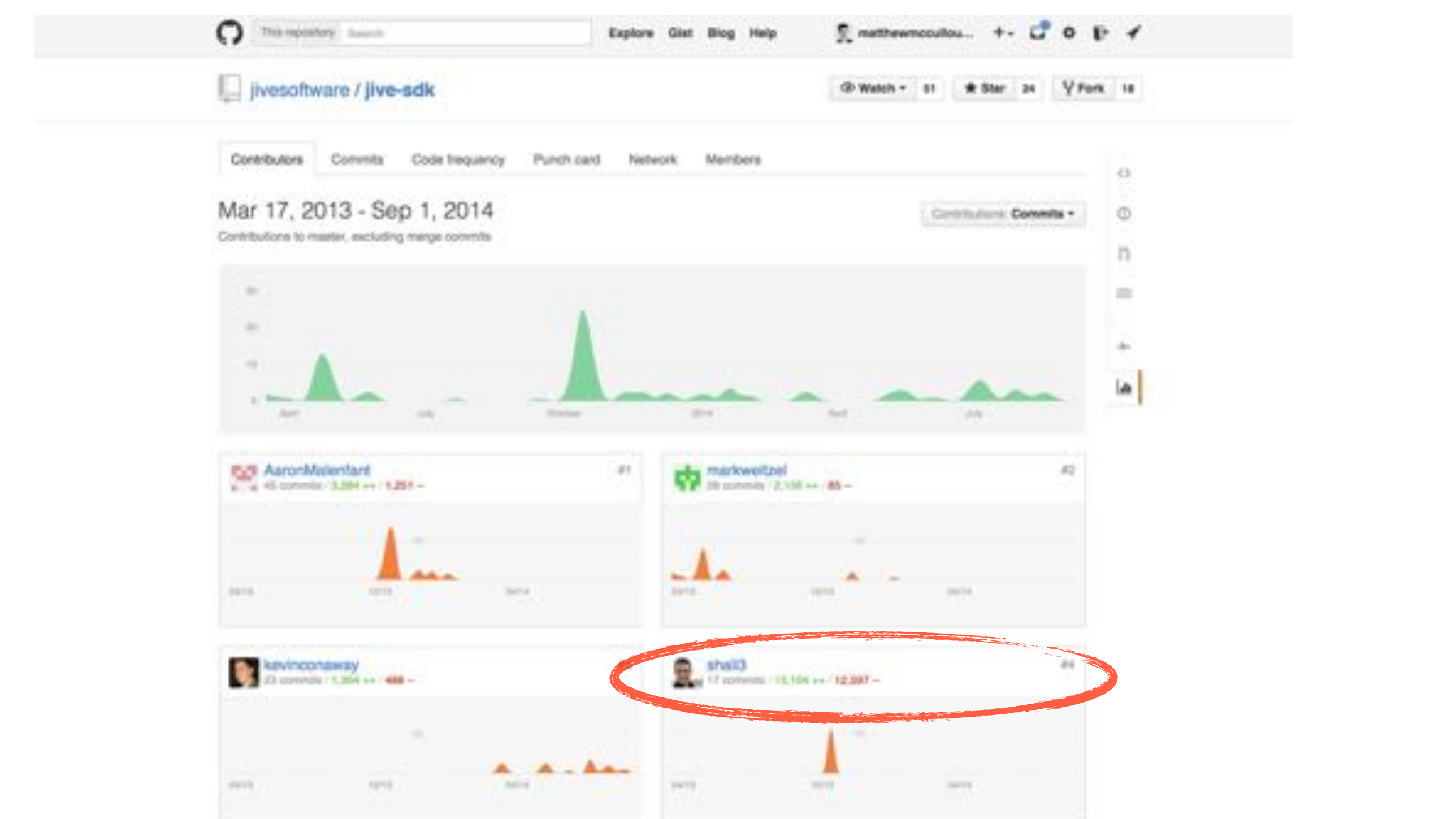
matthewmccullou...
jivesoftware / GitHub4Jive
Watch
49
Unstar
3
Fork
5
This project is to demonstrate the power of integration with Jive. By combining all of the major collaborative elements in GitHub in one add-on Jive can drive innovation with rich discussions and quick access to GitHub resources within Jive. Tiles, apps, services, web hooks, and cartridges will be used to make this experience as natural and powe... https://community.jivesoftware.com/community/developer/projects/github4jive
175 commits
2 branches
0 releases
6 contributors
branch: master
GitHub4Jive / +
UI for Edit Issue Properties action
glen-nicol authored 3 days ago
Latest commit 63df7c6a54
GitHub4Jive-Addon
UI for Edit Issue Properties action
3 days ago
GitHub4Jive-Cartridge
fixed variable name typo
10 days ago
developer-notes.md
Divided project into two sub trees.
a month ago
.gitignore
Removed extension_arc from tracking.
18 days ago
CONTRIBUTING.md
Cleaned up the markdown files
a month ago
GitHub4Jive-Logo.psd
adding resources
a month ago
LICENSE
Initial commit
2 months ago
README.md
Added links to the developer documentation...
10 days ago
Code
Issues
3
Pull Requests
0
Wiki
Pulse
Graphs
HTTPS clone URL
https://github.com
You can clone with HTTPS, SSH, or Subversion.
Clone in Desktop
Download ZIP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Help
jivesoftware / jive-sdk
Watch
Star
Fork
Contributors
Commits
Code frequency
Punch card
Network
Members
Mar 17, 2013 - Sep 1, 2014
Contributions to master, excluding merge commits
AaronMalenfant
markweitzel
kevinconaway
shsi3

WHERE'S THE VALUE?

1. Act
2. Broadcast
3. Condense
4. Decide

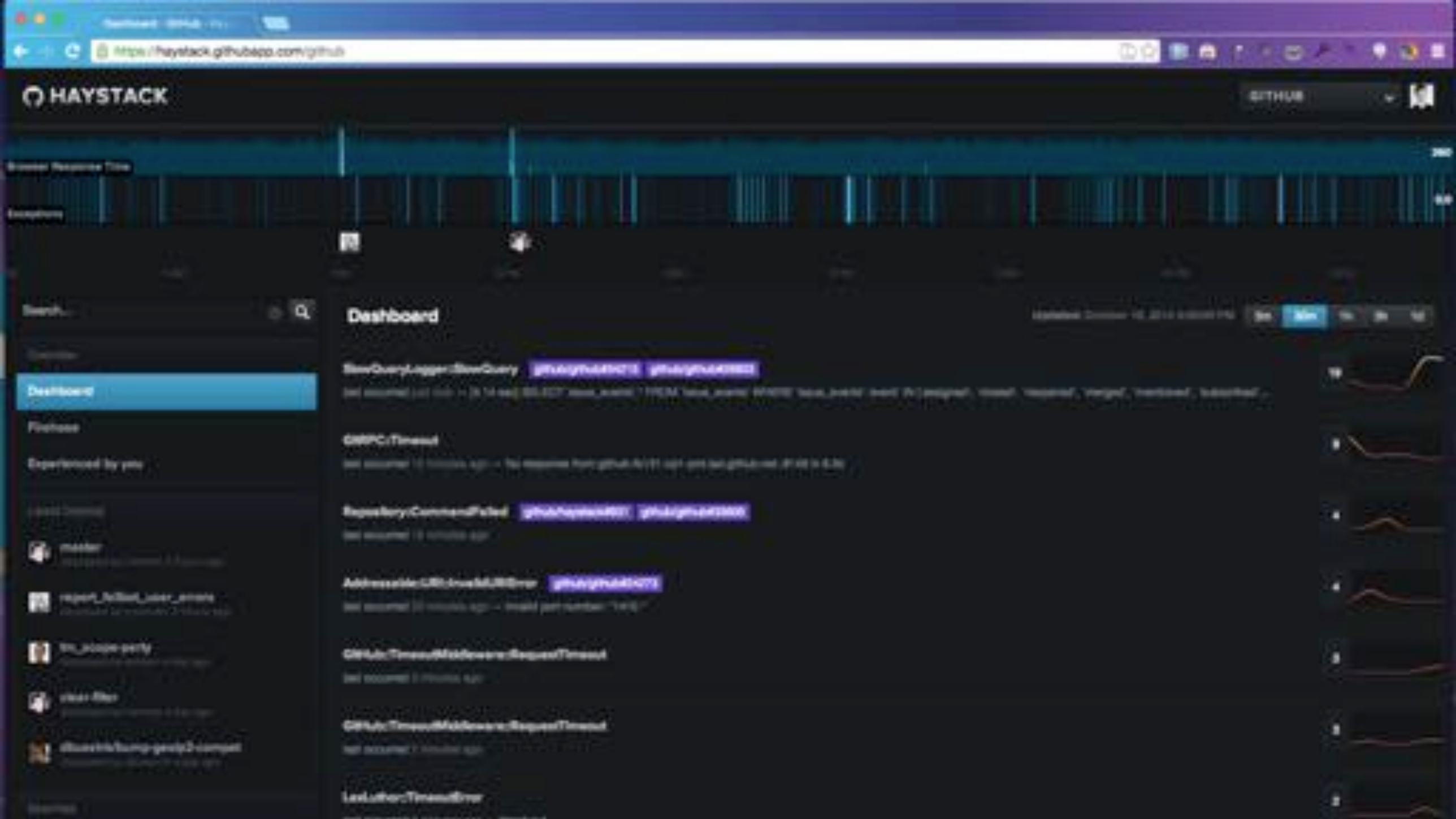
FiveThirtyEight Economics

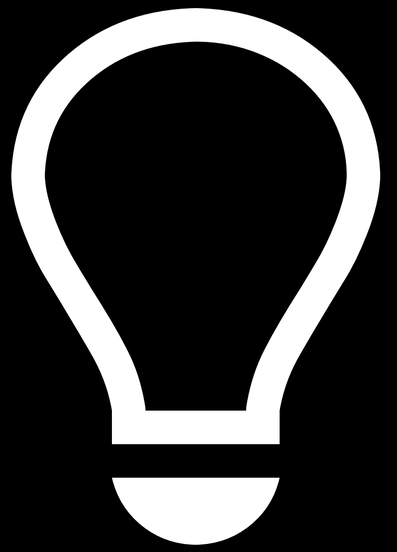
INTELLIGENT MACHINES | 2:59 PM | AUG 22, 2014

If A Computer Can Diagnose Cancer, Will Doctors Become Obsolete?

By ANDREW FLOWERS

The "computational pathologist," a computer software program known as the C-Path, can examine thousands of tissue scans at lightning speed to diagnose patients with breast cancer and even predict their survival rates. Some believe the C-Path, which is built on digital imagery, is as good as or


HAYSTACK
GITHUB
Dashboard
Firehose
Experienced by you
master
GitHub::TimeoutMiddleware::RequestTimeout
GitHub::TimeoutMiddleware::RequestTimeout
LexLuthor::TimeoutError



DECIDE ITERATIVELY

How we use Pull Requests to build GitHub

We recently shipped a new About section. It has all sorts of stuff like high resolution logos, pictures of the GitHub team, a little bit about our story, recent press mentions and maybe most importantly positions we're hiring for. It's awesome.

But that's not the point of this post. Instead, let's take a look at how we used a massive Pull Request to ship this feature.

We talk a lot about how GitHub works in blog posts and talks and this is a great example of how we use Pull Requests.

Here is what the PR looked like for the new About page:

AT&T 4G
6:00
94%
Timeline
Detail
Aug 13, 2012 at 5:10
via Tweetbot for iOS
Beware people with Big Ideas who cannot connect them to execution. Big maneuvers result from many small ones.
Michael Nygard
@mtnygard

DO WE HAVE TO CHANGE?

"Innovation is now recognized as the single most important ingredient in any modern economy."

–The Economist, Thanksgiving for innovation

NO

"It is not necessary to change.

Survival is not mandatory."

–W. Edwards Deming

Kent Beck
@KentBeck

for each desired change, make the change easy (warning: this may be hard), then make the easy change

@MATTHEWMCCULL